

Hardwood Lumber Grading

Collected From: http://www.woodbin.com/ref/wood/hardwood_grades.htm

Hardwoods are graded according to the expected number of clear face cuts a board will yield on its worst side - the larger the number, the higher the grade. The standard grades of hardwood lumber as defined by the U. S. National Hardwood Lumber Association (in descending order of quality) are Firsts, Seconds, Selects, No. 1 Common, No. 2A Common, No. 2B Common, Sound Wormy, No. 3A Common, and No. 3B Common. In practice, some of the above grades are rarely used in the commercial trade and others are typically combined. For example, Firsts and Seconds are usually combined into one grade: "FAS", No. 1 Common and Selects may be grouped as "No. 1 Common and Better", and No. 2A Common and 2B Common may be combined as "No. 2 Common". The grade of Sound Wormy is rarely used commercially.

Grading is based on the size and number of clear cuttings that can be obtained from a board when it is cut up and used for furniture or other products. The higher grades require wider and longer cuttings of clear wood than the lower grades. The specified clear face yield is also realized in a smaller number of cuttings with the higher grades. In the lower grades, the larger number of cuttings permitted provide more leeway in cutting between defects to realize the yield. With a few exceptions, grade is determined from the worst side of a board.

The surface measure of a board is used to determine the number of cuttings permitted for a given grade. For example, the FAS grade specifies a minimum size of 4" x 5' or 3" x 7' for cuttings taken from a board that is at least 6" wide and 8' long. The maximum number of cuttings is nominally four to produce a clear-face yield of 83 1/3 percent. If the surface area of the board is greater than 6 square feet, an additional cutting is allowed if the yield can be raised to 91 2/3 percent.

In selecting wood for a woodworking project, consider the size of the boards required. In many situations, lower grades are a more economical choice than the higher grades; in particular, consider using Select or No 1. Common grade boards rather than Firsts and Seconds if a relatively larger number of small, clear pieces are required.

The standard hardwood lumber grades are summarized below:

Grade	Minimum board length	Minimum board width	Minimum cutting size	Min. Area of clear cuttings required
FAS	8'	6"	4" x 5' 3" x 7'	83-1/3%
Selects	6'	4"	4" x 5' 3" x 7'	83-1/3%
1C	4'	3"	4" x 2' 3" x 3'	66-2/3%
2C	4'	3"	3" x 2'	50%

3AC	4'	3"	3" x 2'	33-1/3%
3BC	4'	3"	1-1/2" x 2'	25%

Firsts and Seconds (FAS)

The best and most expensive grade. Boards 6" and wider, 8' and longer. Yields 83-1/3 percent of clear face cuttings with minimum sizes of 4" x 5', or 3" x 7'. Suitable for fine furniture, cabinetry and applications where clear, wide boards are needed.

Selects

Face side is FAS, back side is No. 1 Common. Boards are 4" and wider , 6' and longer. Yields 83-1/3 percent clear face cuttings with minimum sizes of 4" x 5', or 3" x 7'. A cost effective substitute for FAS when only one good face is required.

No. 1 Common

A typical thrift or "shop" grade. Boards are 3" and wider, 4' and longer. Yields 66-2/3 percent clear face cuttings with minimum sizes of 4" x 2', or 3" x 3'. Provides good value, especially if relatively small pieces can be used.

No. 2A & 2B Common

Boards are 3" and wider, 4' and longer. Yields 50 percent clear face cuttings 3" and wider by 2' and longer. Suitable for some paneling and flooring applications.

Sound Wormy

Same requirements as #1 Common and better but wormholes, limited sound knots and other imperfections allowed. Not commonly available.

No. 3A Common

Boards are 3" and wider, 4' and longer. Yields 33-1/3 percent clear face cuttings 3" and wider by 2' and longer. Economical choice for rough utility applications:, crates, palettes, fencing, etc.

No. 3B Common

Boards are 3" and wider, 4' and longer. Yields 25 percent clear face cuttings 1-1/2" and wider by 2' and longer. Applications same as No. 3A Common.

Source: National Hardwood Lumber Association